

WHAT IS CLAIMED IS:

1. A vehicle steering control system for a vehicle of the type wherein a steering angle to be given to a wheel steering shaft is determined in dependence on a steering angle given to a handle shaft for steering operation and the driving state of said vehicle so that said wheel steering shaft is rotationally driven by a steering shaft drive motor to be given said determined steering angle, said control system comprising:

a current sensor including a current detection resistance provided on a motor power supply path from an vehicle-mounted battery to a driver for said steering shaft drive motor for detecting a current applied to said steering shaft drive motor and a differential amplifier circuit for outputting a voltage across said current detection resistance as a current detection signal;

offset compensation information storage means for storing an offset compensation information used in offset-compensating the output of said current sensor, said offset compensation information being prepared based on a measuring value which is obtained, in advance of the actual use of said system, by measuring an offset output generated by said differential amplifier circuit when said voltage across said current detection resistance is zero; and

offset compensation means for compensating the output of said current sensor based on said offset compensation information in the actual use of said system.

2. A steering control system as set forth in Claim 1, further comprising power supply voltage measuring means for measuring a power supply voltage applied to said current detection resistance; and wherein:

said offset compensation information being power supply voltage dependent offset characteristic information prepared by measuring two or more power supply voltage levels which are set to be mutually different, in advance of the actual use of said system;

said offset compensation means being operable during the actual use of said system, for calculating an inference value of said offset output corresponding to said

measuring value of said power supply voltage, base on said power supply voltage dependent offset characteristic information and for compensating the output of said current sensor with said calculated inference value of said offset output.

3. A steering control system as set forth in Claim 1, further comprising:

current gain compensation information means for storing current gain compensation information for storing, in advance of the actual use of said system, current gain compensation information which is determined by the use of a group of the output value of said current sensor and the output value of a reference current measuring system, the both of said output values being measured by applying a predetermined measuring power supply voltage to said current detection resistance; and

current compensation means for compensating the output of said current sensor based on said current gain compensation information.

4. A vehicle steering control system for a vehicle of the type wherein a steering angle to be given to a wheel steering shaft is determined in dependence on a steering angle given to a handle shaft for steering operation and the driving state of said vehicle so that said wheel steering shaft is rotationally driven by a steering shaft drive motor to be given said determined steering angle, said control system comprising:

a current sensor including a current detection resistance provided on a motor power supply path from an vehicle-mounted battery to a driver for said steering shaft drive motor for detecting a current applied to said steering shaft drive motor and a differential amplifier circuit for outputting a voltage across said current detection resistance as a current detection signal;

current gain compensation information storage means for storing current gain compensation information which is determined by the use of a group of the output value of said current sensor and the output value of a reference current measuring system, the both of said output values being measured, in advance of the actual use of said system, by applying a predetermined measuring power supply voltage to said current

detection resistance; and

current compensation means for compensating the output of said current sensor based on said current gain compensation information.

5. A vehicle steering control system as set forth in Claim 4, wherein:

said steering shaft drive motor is operable under PWM control; and

said current gain compensation information is determined based on the output value of said current sensor and the output value of said reference current measuring system which is measured using a power supply waveform made under PWM control with a predetermined duty ratio.

6. A vehicle steering control system as set forth in Claim 1, further comprising:

motor operation restraining means for restraining the current applied to said steering shaft drive motor, in dependence on the result of current detection by said current sensor.

7. A vehicle steering control system as set forth in Claim 6, wherein:

said handle shaft and said wheel steering shaft are mechanically separated from each other;

a lock mechanism is further provided to be switchable between a locking state that said handle shaft and said wheel steering shaft are connected for bodily rotation and an unlocking state that said handle shaft and said wheel steering shaft are relieved from said locking state; and

said motor operation restraining means includes locking control means for bringing said lock mechanism into said locking state and for stopping the operation of said steering shaft drive motor.